Chapter 9
Symbiotic Venture and Social Capital: The Effects of Market Orientation on Small Entrepreneur Firms in China

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9.1 Introduction

International ventures often adopt the strategies of joint venture or symbiotic alliance (see Varadarajan and Rajaratnam 1986 for a detailed review of the relevant literature). These strategies allow firms to deal with their resource constraints or to reduce the uncertainties in their interdependence (Gulati 1995; Pfeffer and Nowak 1976; Kauser and Shaw 2004; Rowley et al. 2005; Mitsuhashi and Greve 2009). Prior research has identified a number of forms of symbiotic ventures, including strategic groups (Gulati 1995; Murray et al. 2005), supply chain and logistic alliances (Balabanis 1998; Kiessling et al. 2004; Azuma 2005), buyer–supplier relationships (Dyer and Chu 2000; Uzzi 1997), relations with government (Hitt et al. 2006; Rao et al. 2005), supply alliance with co-branding possibilities (Rabino et al. 2008), and symbiotic small–large alliances (Varadarajan and Rajaratnam 1986).

In this study, we focus on a subset of symbiotic ventures, i.e., the small–large firm symbiotic ventures. When a small supplier and a large firm in a given value chain, such as a car parts producer and a large car manufacturer in the automotive industry, establish such a supply–demand joint venture, it is said that they

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are responding to their symbiotic interdependence (Pfeffer and Nowak 1976; Varadarajan and Rajaratnam 1986). Here, we analyze a subset of this type of symbiotic ventures: symbiotic dyads involving a large buyer and a small supplier.

Despite the advances made in the research of symbiotic ventures, the factors that may affect the stability of these symbiotic ventures have not been sufficiently tested. One of such factors is firms' marketing orientation. Research has shown that firms' market orientation is an important factor being able to influence the success of marketing (e.g., Kohli and Jaworski 1990; Narver and Slater 1990; Noble et al. 2002). However, it remains unclear how this factor may influence the stability of symbiotic ventures. Drawing on the literature of social capital theory, we test the effect of marketing orientation of symbiotic ventures.

We believe these tests to be of significance. Theoretically, the results of this study are expected to contribute to the theory of international symbiotic ventures. Prior research has suggested that these symbiotic ventures can often be helpful for market success (e.g., Almeida and Phene 2004; Yamin and Otto 2004), although, as noted, the effect of market orientation on the stability of the symbiotic ventures remains unclear. The results of our current study will contribute to the marketing literature by testing simultaneously the effects of market orientation, social capital, and resource sharing. In other words, the results from this study should help enhancing our knowledge about market orientation and its effect on symbiotic ventures.

Moreover, this study can help to further develop social capital theory. Prior research suggests that some important elements of social capital, such as trust, is important for the stability of symbiotic ventures (Almeida and Phene 2004; Yamin and Otto 2004). However, as discussed above, it remains unclear whether this element of social capital refers to one-sided or mutual trust among the partners, or how the trust can be capitalized upon to strengthen the stability of symbiotic ventures. By filling these research gaps, our current study should contribute to the literature by showing the effects of social capital and identifying the mediator between it and the stability of symbiotic ventures.

Practically, we believe the results of this study will help practitioners to better understand how symbiotic ventures partnership can be maintained and be successful. Some authors, such as Lovett et al. (1999), have suggested that most emerging economies currently conduct business on the basis of a symbiotic relationship (such as a *guanxi*-type system). We consider this suggestion particularly true for small international firms that seek to establish alliances with large firms in emerging economies. Take a major emerging market, i.e., China, as an example. Boisot and Child (1996) predicted that the Chinese economy is moving toward "relationship-based" network capitalism. More specifically, Chinese business, compared with business in the West, is characterized by trust in family-like relationships, where reliance on another partner depends greatly on its embeddedness within a network (Chua et al. 2009). However, such relationship-based networks may be of little use to foreign firms that attempt to enter a market without access to those networks (Svejenova 2006), a situation often faced by small overseas firms considering a partnership with one of China's large state-owned enterprises.

Accordingly, it would be helpful if practitioners understand better how the variables tested in our current paper, such as market orientation, can improve the performance of symbiotic ventures.

Take the Chinese car market as an example, and this market has become the largest one in the world today (Wall Street Journal 2010). Given its potential for further growth, many small auto parts producers from overseas are trying to enter the country. However, because of their resource limitations, these small firms may experience great difficulties in trying to compete with China's large local firms or multinational enterprises. To overcome these difficulties, one option is for small firms to establish and maintain symbiotic venture alliances with large firms already operating in the country. One practical objective of this study was to help such firms to understand how they can do so more effectively.

The remainder of the paper is organized as follows. We first review relevant aspects of the prior research on symbiotic ventures. Based on this literature review, we then propose a model and relevant hypotheses for empirical testing. Following empirical analysis based on data drawn from China's auto industry, we then report our findings and conclude with a discussion of their implications for academic researchers and practitioners.

9.2 Theoretical Background and Hypotheses

Researchers have been studying symbiotic interdependence for decades. Hawley (1950, p. 36), for instance, defines it as "a mutual dependence between unlike organizations." This mutual dependence is often associated with mutual trust. By establishing symbiosis with such social capital as mutual trust, organizations may enhance their ability to obtain resources and hence improve performance (see Varadarajan and Rajaratnam 1986 for a detailed discussion of the advantages of business symbioses). Relationships between independent entities participating in symbiotic ventures, such as dealers, suppliers, and distributors, can also be considered a form of "relationship marketing" in which attempts are made to establish win-win relationships (see, e.g., Copulsky and Wolf 1990; Mitchell et al. 1992). Some authors also point out that the central construct in relationship marketing is the trust among all partners involved (Katsikeas et al. 2009).

Research suggests that the nature and scope of symbiotic ventures can be understood along six dimensions: time frame (short, medium, or long term), proximity (arms-length or close working), number (one or a simultaneous multiple), level (organizational or functional), focus (product offerings of one or both symbiotic partners), and scope at the functional level (joint formulation of overall strategy or limited to specific projects or programs) (Varadarajan and Rajaratnam 1986, p. 8).

Based on this body of research, this paper defines symbiotic ventures as strategic alliances based on symbiotic interdependence. These can also be considered as a form of strategic cooperation or connection between two independent firms or

organizations. This definition is consistent with previous research on the constructs of business symbiosis and symbiotic interdependence (see, e.g., Adler 1966; Pfeffer 1976; Pfeffer and Nowak 1976; Varadarajan and Rajaratnam 1986; Reuer and Ragozzino 2006). All cases of symbiotic interdependence have a common characteristic, namely that none of the parties involved in the symbiosis are competing head-to-head for the same resources, and they more or less depend on each other for some important resources to survive, operate, and grow in the industry (Pfeffer and Nowak 1976).

In addition, using the six dimensions identified by Varadarajan and Rajaratnam (1986), we further define a subset of symbiotic ventures, namely the small–large symbiotic dyads that we focus on in this study. The dyads we consider are partnerships in Chinese auto industry in which a small supplier sells a certain product to a large carmaker. Specifically, in terms of time frame, we study a form of medium- or long-term alliance. In terms of proximity or interlocking ownership, we study only alliances in which each symbiotic partner maintains independent ownership. In terms of number, we focus on symbiotic ventures comprising only two firms and at the organizational level. Finally, in terms of focus and scope, we consider only the product that a small supplier produces for a large partner, namely the carmaker.

Past research also indicates that mutual trust is a very important issue to a given strategic alliance, including a symbiotic venture alliance (see, e.g., Dyer and Chu 2000; Madhok 2006). In other words, the trust among partners can influence stability (see, e.g., Gulati and Singh 1998; Koza and Lewin 1998; Li and Rowley 2002). In this context, trust can be defined as the degree to which a trustor believes in the goodwill and reliability of the trustee in a risky exchange situation (Das and Teng 1998), which is a determinant of relationship quality (Moorman et al. 1992). Some authors show that trust influences the formation of strategic alliances or ventures (Gulati and Westphal 1999; Parkhe 1993), while others argue that it should function as a major positive force in partner cooperation by reducing uncertainty and risk in symbiotic relations (Li et al. 2010). Trust can also help to create competitive advantages for partners because it lowers transaction costs and leads to better information-sharing routines (Das and Teng 1998; Fukuyama 1995; Kanter 1994; Kumar 1996; Lane and Bachmann 1996; Ring and Van de Ven 1992). Moreover, it provides a basis for expanded moral relations in business (Brenkert 1998).

In spite of the studies, as mentioned above, the effects of some variables, such as market orientation, on the stability of symbiotic ventures remain unclear. For managements of small entrepreneur firms that are targeting global market, it would be of interests to study the effects. Moreover, as we have also mentioned above, most of the extant literature on market orientation and symbiotic ventures were conducted among firms in developed countries, such as the USA or Japan (e.g., Choi et al. 1999; Dyer and Chu 2000; Johnson et al. 1996). On the other hand, some emerging markets, such as the Chinese market, are becoming more and more important. To address this research gap, it would be helpful to conduct more empirical studies in emerging economies.

Based on research on social capital theory, our study proposes a new theoretical model to address the issues above. Before discussing this model, we first provide a brief review of that theory.

9.3 Social Capital Theory and Market

According to research (see, e.g., Nahapiet and Ghoshal 1998), social capital can be defined as the goodwill or trust available to individuals or groups. In other words, goodwill or trust that others have toward us is the substance of social capital. Its effects flow from the information, influence, and solidarity, and it makes available to the actor (Adler and Kwon 2002, p. 23). Social capital can also be considered as "a resource that inheres in the social network tying a focal actor to other actors, and this concept reflects the primordial feature of social life" (Adler and Kwon 2002, pp. 17–19). As Adler and Kwon (2002, p. 18) have pointed out, "the core intuition guiding social capital research is that the goodwill that others have towards us is a valuable resource." We believe that this goodwill mainly includes the trust that others show toward us. Thus, when partners in a dyad of symbiotic venture alliance have goodwill toward each other, the symbiotic venture can be considered to have a high level of goodwill, including mutual trust.

Research also suggests that social capital may be culturally specific. In other words, it is more likely to exist or function in cultures that treasure social ties (Putnam 2000). Accordingly, in those countries or cultures where social networks are important, such as China, Italy, and Israel, social capital may be more relevant or significant in terms of its effects on organizational behaviors and outcomes.

From the perspective of social capital theory, it is arguable that mutual trust among partners can be considered as an important piece of social capital or intangible resource within a strategic alliance, which helps maintain its stability and reduces the transaction costs among partners (Gooderham et al. 2011). Mutual trust differs from one-sided trust, which emanates from only one party, along several dimensions. Table 9.1 provides a summary of these differences.

Firstly, social capital is located not in a given actor but in its relations with other actors (see, e.g., Adler and Kwon 2002). According to this argument, mutual trust is a piece of social capital while one-sided trust is not. One-sided trust can exist independently from that of other actors because it may represent a single actor's wishful thinking or personal preferences. In other words, one-sided trust can be located in one actor only. On the other hand, mutual trust can never be independent from others. Taking the case of partners in a strategic alliance as an example, if one fails to maintain its trust in others, mutual trust will decrease or even disappear. This may happen even if other partners maintain their trust in that partner. In other situations, the one-sided trust of a given partner in terms of other members of the symbiotic venture may remain unchanged, but others may no longer trust it, which should still have a negative effect on mutual trust in the symbiotic venture overall.

Table 9.1 Contrasting one-sided trust and mutual trust

As a piece of social capital	One-sided trust	Mutual trust
Location	Can be located in one actor or one party only	Should be located among all actors and partners in a given strategic alliance
Dependency on other actors	Can be independent from other actors and partners	Can never be independent from other actors and partners
Requirement of resource investment	May not need such resource investment and can be derived from a partner's personal believe and wishful thinking only	Need investing significant resources by both/all of the partners involved
Maintenance and renew	Can be maintained for a long time without being renewed or confirmed by all parties involved	Have to be periodically renewed and reconfirmed by all parties involved, or it may disappear
Social structure	Can exist independently without any specific social structure	Must exist with one, two, or all of the social structures: • Market relations • Hierarchical relations • Social relations

Source By the authors

Secondly, the development of social capital requires firms to make significant efforts or to commit a large amount of tangible, intangible, and human resources. In other words, its development or accumulation represents a very significant investment (Nahapiet and Ghoshal 1998, p. 260). According to the character of this development process, mutual trust can be considered as a piece of social capital, while one-sided trust cannot. The reason for this is that one-sided trust may be derived simply from a partner's personal preference, subjective opinions, and/or wishful thinking, while mutual trust cannot. Without significant resources being invested by all of the partners involved, there can never be a high level of mutual trust in a given strategic alliance.

Thirdly, social capital has to be periodically renewed and reconfirmed, or it loses its efficacy and disappears (see, e.g., Adler and Kwon 2002). According to this characterization, mutual trust is a piece of social capital, while one-sided trust is not. As mentioned above, the development of one-sided trust may not be contingent on a significant investment of resources and may remain unchanged for a long time even without any effort to renew or reconfirm. On the other hand, mutual trust should be periodically renewed and reconfirmed by all partners or parties in a given alliance, or it will lose its efficacy or function.

Finally, according to Adler and Kwon (2002, pp. 18–22), a precondition for social capital is the satisfaction of the three dimensions of social structure: (1) market relations, in which products and services are exchanged for money or bartered; (2) hierarchical relations, in which obedience to authority is exchanged for material and other resources; and (3) social relations, in which favors and gifts are exchanged.

Considering these three dimensions, one can again see that mutual trust is a piece of social capital, while one-sided trust is not. The former cannot exist without the social structure of three exchanges, while the latter may be derived independently from it. For example, a clan may have trust in a certain God, who is neither a business partner nor a hierarchical authority, but this one-sided trust can exist in a given party for a long time.

Research also suggests that firms' market orientation may help increase their social capital. Market orientation can be defined as the degree to which the supplier understands the needs of the buyer and reacts quickly to any changes in demand from its customers (cf., Zhou et al. 2008; Azuma 2005). According to the literature of market orientation, if a supplier has a high level of market orientation, it should become more flexible to the change of market and more sensitive to the needs of customers, which in turn should help obtain a piece of important social capital—the trust of customers or buyers (e.g., Johnson et al. 1996). In other words, with a high level of market orientation, a supplier is more likely to serve its buyer better in a given value chain. This better service, in turn, is more likely to increase the mutual trust between this supplier and its customers (e.g., Zhou et al. 2008), which can be considered a piece of social capital for the firm. Research has provided empirical evidence supporting this evidence (e.g., Johnson et al. 1996). Firms with naturally trust are also more willing to pursue alliances if their partners can facilitate access to the resources they need (Gimeno 2004; Gimeno et al. 2005; Luo 2005; Mitsuhashi and Greve 2009).

In emerging economies, we believe the effect of market orientation can be even more significant because of the poorer institutions for market transaction. In other words, the law system has yet been fully developed in emerging markets. As a result, in these markets, a given supplier in a symbiotic venture alliance may have to obtain its trust or social capital through doing a good job in meeting the demands of its partners or customers. Accordingly, we make the following hypothesis.

> H1: In an emerging economy such as China, market orientation of a given firm has a significant and positive relationship with the amount of its social capital in symbiotic venture alliance.

On the other hand, based on the perspective of social capital theory, it is arguable that strategic alliances, including symbiotic ventures, should perform better and last longer if they can call upon mutual trust or other social capital. This should be especially true in emerging markets where a legal system for market economy has yet to be fully developed (e.g., Gulati and Westphal 1999; Geletkanycz and Hambrick 1997; Luo 2001; Currall and Inkpen 2002). The importance of mutual trust among partners in symbiotic ventures can be supported by research evidence (Levinthal and Fichman 1988; Luo 2005; Seabright et al. 1992; Chen et al. 2004). For example, in pursuing R&D innovation, managers are more likely to choose alliance partners from among their friends that they trust than from among strangers (Li et al. 2008). Consistent with this argument, we predict that mutual trust, considered in our current study as a piece of social capital, may have a positive direct effect on the stability of a symbiotic alliance. At the same time, it may also

have an indirect effect on such stability through the sharing of organizational resources. Below, we provide a detailed discussion of these two predictions based on research.

9.3.1 Mutual Trust as Social Capital and the Stability of Symbiotic Ventures

Symbiotic ventures that are imbued with mutual trust can provide all partners with channels to information, knowledge, and resources that they might not otherwise be able to access (McDermott and Corredoira 2010; Jandik and Kali 2009). Mutual trust, as a piece of social capital, has also been shown to encourage interorganizational collaboration (Dwyer et al. 1987). All these propositions should also be true for firms in auto industry, especially for those operating in societies such as China, where the relationship network is important (see, e.g., Wasti and Wasti 2008). Based on past studies in emerging markets, we predict that, when the symbiotic ventures partners in emerging markets have mutual trust, i.e., a piece of valuable social capital, there is more likely to be stability in the symbiotic ventures alliance.

> H2: In an emerging economy such as China, social capital has a significant and positive relationship with the stability of symbiotic venture alliances.

Consistent with the two hypotheses above, we predict that social capital may mediate the relationship between market orientation and the stability of the symbiotic ventures. In other words, we predict that market orientation may improve a firm's social capital, which in turn should strengthen the stability of symbiotic ventures.

> H3: In an emerging economy such as China, social capital mediates the relationship between market orientation and the stability of symbiotic venture alliance.

In addition, we predict that social capital should also be capitalized by sharing resources among the partners in a symbiotic alliance, which in turn should increase its stability. Here, one should observe two relevant processes. On the one hand, the increase in social capital leads to better sharing of resources among the partners in a given alliance. This prediction is consistent with research evidence. For instance, in symbiotic ventures, mutual trust in each others' reliability and integrity, when verified and reinforced over time, has been shown to increase the sharing of resources (Dwyer et al. 1987). It is also suggested that such social capital as mutual trust can reduce transactional costs and suppresses opportunistic behaviors (Doney and Cannon 1997), which should also have a positive effect on resource sharing among partners. One main reason for this might be that according to the transaction cost perspective, this benefit should also enable the partners involved to effectively lower their information search costs (Williamson 1975), which, again, should be especially true in emerging markets. With low-cost and reliable information as well

as a high level of mutual trust, partners in a symbiotic alliance should be more willing to share resources, such as information on new products and technology in a given industry. Also, because mutual trust helps to reduce transaction costs, resources can also be shared more efficiently. Several recent studies, including those conducted in emerging economies, have provided evidence supporting this argument (see, e.g., Gooderham et al. 2011). According to these studies, we propose the following hypothesis for an emerging market such as China:

> H4: In an emerging economy such as China, social capital has a significant and positive relationship with resource sharing among the partners involved in the venture alliance.

Finally, the sharing of resources should also have a positive relationship with the stability of a symbiotic alliance, and this should be especially true in an emerging economy. Research suggests that among interconnected firms, including symbiotic ventures, the relational rent, including stability, can be extracted only from the shared resources of the partners involved (Lavie 2006, p. 644). The reason is that, as Dyer and Singh (1998) point out, this type of rent cannot be generated individually by a single partner in the symbiotic venture. It can only be developed through the processes of combining, exchanging, sharing, and co-developing of resources. Hence, we predict the following hypothesis:

> H5: In an emerging economy such as China, there should be a positive relationship between the sharing of resources and the stability of symbiotic venture alliance.

In the hypotheses above, we actually predict another mediating effect, i.e., that of resource sharing. Specifically, we predict a positive mediating effect of this variable on the relationship between mutual trust and the stability of the symbiotic ventures.

Figure 9.1 shows a model summarizing the hypotheses that we have proposed above. In this model, we predict that market orientation has a positive relationship with the amount of social capital (H1). The social capital, in turn, should have both direct and indirect effects on the stability of the symbiotic ventures (H3). On the one

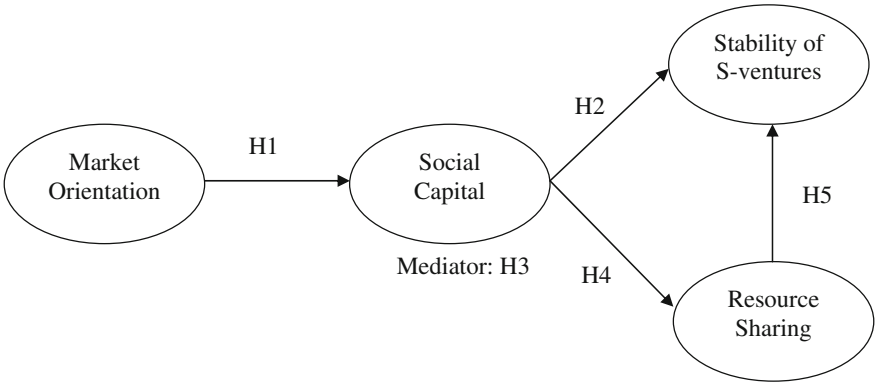

Fig. 9.1 A conceptual model about the effects of social capital

hand, the social capital has a direct and positive effect on the stability (H2). On the other hand, the social capital has a direct and positive effect on resource sharing (H4), which in turn influences the stability of the symbiotic ventures positively (H5).

9.4 Methods

9.4.1 Setting, Sampling, and Data

To test our hypotheses, we collected data from members of symbiotic ventures operating in China's auto industry. The main reason for selecting this sample was that Chinese culture emphasizes the importance of social ties, making it more likely that we can observe the effects of social capital on symbiotic ventures, including symbiotic ventures (Putnam 2000). Moreover, China has become one of the fastest-growing markets for the auto industry, yet little empirical research has been conducted on these issues. Therefore, exploring the extent and function of mutual trust in Chinese society can enhance our understanding of its effect. Moreover, this industry is characterized by a great number of small–large dyads or symbiotic ventures than many other industries, which makes it easier for data collection. Finally, relatively few studies on the topic of symbiotic ventures or marketing have been conducted in China, so choosing this research context adds to the empirical evidence available.

We first obtained approval to conduct the study from the top management of one of China's largest car producers, which has more than 100,000 employees. Using a name list and relevant data from this company, we then randomly contacted 100 of its auto parts suppliers in 2009, 89 of which expressed willingness to allow us to conduct interviews in their firms and to respond to our questionnaires. The largest of these supply firms had 6,202 employees, and the smallest just 22 (mean = 632 employees). In terms of ownership, 31 had overseas ownership, and 58 were owned by the Chinese governments. The data collected from these 89 firms and their common larger partner, i.e., the aforementioned carmaker, gave us a total of 89 symbiotic dyads on which to test our hypotheses.

To avoid common method biases, we collected data from three sources: (1) the questionnaire data collected from each supplier, whose CEOs responded to the questions; (2) the questionnaire data gathered from the carmaker, whose senior manager in charge of outsourcing provided the responses; and (3) documentary data obtained from the carmaker's archives, including its records and statistics on suppliers. These records covered the tenure of the symbiotic alliance with a given small supplier, its size, and its ownership structure. The methods of data collection from all three sources are discussed in the following section.

9.4.2 Measurements

All of the questionnaire items employed in this study were measured on a seven-point Likert scale in which the responses ranged from 1 ("strongly disagree") to 7 ("strongly agree"). The items, which were originally in English, were adapted from publications in top-tier academic journals. We adopted the technique of translation and back translation to develop a Chinese version of the measurement instruments and then conducted pretests of their reliability among a group of MBA students in China.

9.4.2.1 Independent Variables

(a) Questionnaire measures

Trust of a given partner (one-sided trust) was measured using a five-item instrument adapted from Kale et al. (2000) for studying trust in symbiotic ventures: (1) "there is a good understanding among the partners"; (2) "the strategic alliance is characterized by mutual respect among the partners"; (3) "the strategic alliance is characterized by mutual trust among the partners"; (4) "the strategic alliance is characterized by personal friendship among the partners' managers; and (5) "the strategic alliance is characterized by a cooperative attitude among the partners." Our pretest produced a reliability alpha of 0.83. As previously noted, managers from both the suppliers and the car manufacturer responded to this set of questions.

Social capital was measured based on the measures discussed above. Specifically, to operationalize this construct, we first defined it as the sum of the trusts among all partners toward each other in a given alliance after taking into account the difference between the partners in their levels of trust for each other. Based on this definition, we developed the following formula for the dyads in this study:

$$\text{Social capital} = (\text{trust of suppliers} + \text{trust of buyer}) - |\text{trust of buyer} - \text{trust of suppliers}|.$$

In this formula, we actually take into account two issues according to our definition of social capital. First, we consider the sum of the total trust among partners. The reason is that social capital would not exist without mutual trust between a given partner and other partners in the same alliance. Second, we consider the difference in the level of trusting other partners in the symbiotic venture, which is consistent with the basic assumption of social capital theory. For instance, the sum of trust could be also high even though one actor has a low level of trust, while other actor has a high level of trust. Our formula helps reduce the effects of this trust differential. Other conditions being equal, the higher the value based on this formula, the higher the social capital.

Motivation to maintain symbiotic relationship (symbiosis motivation) was measured by three items adapted from McFarland et al. (2008): (1) "we expect the relationship with this company to continue for a long time"; (2) "renewing the

relationship with this company is virtually automatic"; and (3) "in the next two years, we are likely to terminate this relationship" (reverse-coded). Our pretest showed this instrument to have a reliability alpha of 0.782. The supplier in each symbiotic alliance responded to this set of questions.

Market orientation on the part of a given supplier was measured by four items adapted from Zhou et al. (2008): (1) "we are quick to detect changes in our customers' product preferences"; (2) "we are quick to detect fundamental shifts in our industry"; (3) "customer suggestions and comments are disseminated at all levels of the organization on a regular basis"; and (4) "we pay close attention to changes in our customers' needs." A pretest showed this instrument to have a reliability alpha of 0.845. The suppliers in the symbiotic ventures responded to this set of questions.

(b) Archival data measure

Location proximity was measured by a dummy variable indicating whether the supplier was located in an inland province of China. Because most domestic carmakers are located in these provinces, those that were coded as one (i.e., proximate), and those located elsewhere were coded as zero (i.e., not proximate).

Some of the other information in the archival dataset was also coded, including **government or state ownership** and supplier **size**. All of these data items were used as control variables in our regression analyses.

9.4.2.2 Dependent Variable

Stability of symbiotic venture (S-venture) was a measure concerning whether a carmaker is willing to continue its relationship of symbiotic venture with its supplier partner. Because the source of this dependent variable was different from those of the independent variables, the threats of common method biases and study tautology were avoided. More specifically, assuming that the willingness of the carmaker to continue using a given supplier is the most important factor influencing the stability of the symbiotic venture between the two, we measured alliance stability with a set of questionnaire items adapted from McFarland et al. (2008): (1) "Even if we could, we would not drop this supplier because we like being associated with it"; (2) "we want to continue as a customer of this firm, because we genuinely enjoy our relationship with it"; and (3) "our positive feelings toward this company are a major reason we continue to work with it." Our assumption was that if the large and more powerful carmaker in the small–large symbiotic dyad was unwilling to continue the symbiotic alliance, then the symbiotic venture was more likely to be terminated soon. The carmaker could either find another supplier or internalize production of the auto part in question, depending on which was more likely to reduce transaction costs. Our pretest showed this instrument to have a reliability alpha of 0.811.

9.4.2.3 Control Variables

As previously noted, we controlled for the effects of several factors, including **firm size, state ownership, symbiotic alliance tenure,** and **perceived resource complementarity among the partners**. **Firm size** was measured by the log of the total number of employees working for a given firm. **State ownership** was measured by dummies coded one for yes and zero for no. **Symbiotic alliance tenure** was measured by the number of years the supplier had supplied parts to the carmaker. Finally, **resource complementarity** in the symbiotic venture, the degree to which partners' resources are bound together through collaboration (Luo et al. 2008), was measured on a scale ranging from 1 to 100 %. The managers of each supplier responded to this question by selecting a number on the scale, such as 20 or 40 %.

9.5 Data Analysis and Results

Table 9.2 presents the descriptive statistics for our data. Some interesting correlation can be observed here. For instance, state ownership among suppliers was significantly and negatively correlated with location proximity to the buyer. This finding suggests that the majority of suppliers located near the allied carmaker are not state-owned. After checking the data further, we found that the majority of Chinese suppliers in close physical proximity to their alliance partners are private firms.

To test the hypotheses proposed above, we adopted the approach of hierarchical linear regression. Specifically, to test hypothesis 1, we first entered social capital as a dependent variable. Subsequently, we entered several control variables—**firm size**, **state ownership**, **tenure of alliance**, **location proximity, and resource complementarity** (Model 1)—followed by the independent variable, i.e., market orientation (Model 2).

Table 9.3 shows the results of the analyses. The numbers suggest that there is a significant and positive effect of **market orientation** on **social capital** (standardized beta = 0.41; $p \leq 0.001$). This result supports hypothesis 1.

With similar approaches of regression, we further tested the effects of **social capital** on the **stability of S-venture** (H3) and **resource sharing** (H4). Table 9.4 shows the results of the analyses. Below, we discuss the results briefly.

9.5.1 The Effect of Social Capital on Resource Sharing

The last three columns of Table 9.4 present the relevant results. First, the number in Model 1 shows a significant and positive effect of resources complementarity (standardized beta = 0.42, $p \leq 0.01$) on resource sharing (see Model 1). In addition, the overall model F values in Model 1 suggests that the explanatory power of the

Table 9.2 Descriptive statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1 State ownership	0.65	0.48									
2. Resource complementarity	0.57	0.25	−0.26*								
3 Social capital	11.23	3.35	−0.14	0.14							
4 Size	5.64	1.14	−0.22*	0.31**	0.11						
5 Tenure of alliance	12.1	7.74	−0.1	−0.08	0.02	0.28**					
6 Location proximity	0.22	0.42	−0.33**	−0.1	0.09	0.16	0.13				
7 Resource sharing	2.5	1.14	0.18	0.09	0.38**	0.17	0.11	0.13			
8 One-sided trust of a suppliers	4.4	0.66	−0.12	−0.03	−0.03	−0.16	−0.25*	−0.39**	0.12		
9 One-sided trust of its buyers	3.25	1.86	0.08	0.47**	0.17*	0.18	0	−0.03	−0.1	−0.09	
10 Stability of S-venture	3.5	0.65	0.03	0.35**	0.41**	0.11	0.07	0.41**	0.39**	0.15	0.48***

Note * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$ (two-tailed)

Table 9.3 The effects of market orientation on social capital (H1)

	M1	M2
Control variables		
State ownership	−0.19	−0.08
Resource complementarity	0.04	0.32**
Size	0.08	0.07
Tenure of alliance	−0.16	−0.09
Location proximity	0.02	0.01
Motivation to symbiosis	0.04	0.03
Trust of the supplier	−0.13	−0.12
Independent variable		
Market orientation		0.41***
Overall model		
R^2	0.20	0.39
ΔR^2	0.20	0.17
F	5.16***	6.99***
ΔF	4.57***	19.53***

Note *$p \leq 0.05$ (two-tailed); **$p \leq 0.01$; ***$p \leq 0.001$

regression equation is significant ($F = 5.77$, $p \leq 0.001$). With the entry of **market orientation** in Model 2, the overall model F value was significantly improved ($F = 7.87$, $p \leq 0.001$), and the effects of the independent variables were significant. Finally, after we entered **social capital**, the model was further improved ($F = 9.21$, $p \leq 0.001$), and we found a significant and positive effect of **social capital** on resource sharing (standardized beta = 0.25; $p \leq 0.01$). This result supports hypothesis 4, which also suggests that social capital can be considered a mediator on the relationship between **market orientation** and **resource sharing**.

9.5.2 The Effect of Social Capital on the Stability of Symbiotic Venture

The first three columns of Table 9.4 show the effects of social capital on stability of the symbiotic ventures. First, the numbers in Model 1 show the effects of the control variables, and none of them is statistically significant. With the entry of **market orientation** in Model 2, the overall model F value was significantly improved ($F = 4.55$, $p \leq 0.001$), and the effect of the independent variable was significant. Finally, after we entered **social capital**, the model was further improved ($F = 7.73$, $p \leq 0.001$), and we found a significant and positive effect of **social capital** on the stability of S-venture (standardized beta = 0.40; $p \leq 0.01$). This result supports hypothesis 2, which predicts both a significant and positive direct effect of social capital on the stability of the symbiotic ventures. Moreover, the results also suggest that social capital can be considered a mediator on the relationship between **market orientation** and S-venture stability, which supports hypothesis 3.

Table 9.4 The effects of social capital on the stability of symbiotic venture and resource sharing

	Stability of S-venture (H3)			Resource sharing (H4)		
	M1	M2	M3	M1	M2	M3
Control variables						
State ownership	−0.19	−0.20	−0.10	0.21	0.21	0.20
Resource complementarity	0.04	0.07	0.05	0.40***	0.39***	0.38***
Size	0.08	0.11	0.21**	0.16	0.09	0.11
Tenure of alliance	−0.16	−0.14	−0.07	0.06	0.03	−0.01
Location proximity	0.02	−0.04	−0.11	0.10	0.10	0.11
Motivation to symbiosis	0.04	−0.05	−0.12	0.09	−0.07	−0.09
Trust of the supplier	−0.13	−0.10	0.46***	−0.10	−0.10	0.25**
Independent variables						
Market orientation		0.28**	0.20**		0.25**	0.24**
Social capital			0.40***			0.25**
Overall model						
R^2	0.2	0.19	0.39	0.25	0.35	0.41
ΔR^2	0.2	0.03	0.17	0.25	0.11	0.07
F	4.83***	4.55***	7.73***	5.77***	7.87***	9.21***
ΔF	4.83***	2.97	19.85***	5.72***	13.9***	8.17***

Note *$p \leq 0.05$ (two-tailed); **$p \leq 0.01$; ***$p \leq 0.001$

Finally, to test hypothesis 5, we adopted the same approach of regression. Specifically, we first entered the **stability of symbiotic venture** as a dependent variable. After that, we entered the control variables—**firm size, state ownership, tenure of alliance**, **location proximity**, **and resource complementarity** (Model 1)—followed by **social capital** (Model 2). Finally, we entered the mediator—resource sharing.

Table 9.5 shows the results of the analyses. While most of the results in this table are consistent with those in Table 9.4, one can see that, with the entry of **sharing resources** in Model 3, the explanatory power of the regression equation is increased further ($\Delta F = 16.77$, $p \leq 0.001$), and there is a significant and positive effect of **sharing resource** on the dependent variable (standardized beta = 0.63; $p \leq 0.001$). Moreover, there is still a significant and positive effect of **social capital** on the dependent variable (standardized beta = 0.36; $p \leq 0.01$). All these results suggest that **sharing resources** partially mediates the relationship between **social capital** and the dependent variable, i.e., the **stability of symbiotic venture**. In other words, the resources of social capital can be capitalized through sharing of resources to improve the stability of the symbiotic ventures, and the same resource can also have a direct and positive effect on the stability of the symbiotic ventures.

Table 9.5 Mediating effect of sharing resources (H5)

	M1	M2	M3
Control variables			
State ownership	−0.19	−0.10	−0.18
Resource complementarity	0.04	0.05	0.13
Size	0.08	0.21**	0.11
Tenure of alliance	−0.16	−0.07	0.00
Location proximity	0.02	−0.11	0.38***
Motivation to symbiosis	0.04	−0.12	−0.11
Trust of the supplier	−0.13	0.46***	0.33**
State ownership	−0.19	−0.10	−0.10
Independent variables			
Social capital		0.41***	0.36**
Mediator			
Resource sharing			0.63***
Overall model			
R^2	0.21	0.38	0.62
ΔR^2	0.21	0.15	0.39
F	4.56***	7.39***	16.77***
ΔF	4.56***	20.23***	41.89***

Note *$p \leq 0.05$ (two-tailed); **$p \leq 0.01$; ***$p \leq 0.001$

9.6 Discussion and Conclusion

Using data from China's auto industry, this study shows empirical evidence for the effect market orientation on social capital, which in turn influences the stability of symbiotic ventures positively. Drawing on the perspective of social capital theory, this study also compares the construct of one-sided trust with that of mutual trust and identifies key differences. Based on this comparison, a measurement of social capital was developed and applied to the study of symbiotic ventures in the current study. Showing how market orientation may lead to the increase in social capital, the resource sharing, and the stability of symbiotic ventures, this paper makes contribution to the relevant literature.

This study contributes to social capital theory by providing new evidence for the positive effect of a seldom-tested variable—the mutual trust among symbiotic partners. No previous study has tested this element of social capital although several authors have suggested it may have important effects on the development and stability of symbiotic ventures. By testing the effect of this element of social capital empirically, we show that the level of social capital has a significant effect on the stability of a symbiotic venture alliance.

Moreover, the findings from this study increase our knowledge about the relationships among market orientation, social capital, resource sharing, and the stability of symbiotic ventures alliances. Specifically, by testing the mediating effect of social capital, we show how social capital can have both direct and indirect effects on the stability of symbiotic ventures alliances. While social capital may influence stability directly, it can also influence the sharing of important resources among the partners and thus exhibit an indirect influence as well.

In addition, the data from this study show that the one-sided trust of small partners or suppliers has no effects or may even has a negative effect on the stability of the symbiotic ventures alliances. The negative effect here may be caused by the overrating of the trust by the suppliers. Believing that they enjoy a higher level of trust in S-venture, these firms may actually perform poorer as suppliers. On the other hand, those that do not have much confidence in the trust may actually be more careful and more willing to provide better products to their customers. Hence, there is a negative relationship between the one-sided trust and the stability of S-venture. By showing the evidence that one-sided trust, especially the one-sided trust of small and less powerful partners, may not really predict the stability of their symbiotic ventures, our current study can help improve the quality of future research on trust and its consequences.

Finally, although our study was conducted in China, we believe that the findings should have sufficient external validity. The reason is that none of the findings are really culturally specific, and the results are consistent with those obtained from other societies or economies. Moreover, no research has suggested the effects of market orientation and social capital should be moderated by the level of economic development.

9.6.1 Implications

In terms of academic research, our results show that more comprehensive investigations are required in future to test the factors or variables that may influence the performance or stability of symbiotic ventures alliances. For instance, previous research of symbiotic ventures has paid insufficient attention to the effects of market orientation and social capital, and our current study suggests that these variables can be critical to understanding the explanatory power of the regression equations. Without taking into account the effect of social capital, for instance, the effects of many other relevant factors may not be significant. Accordingly, future research in this area should give more consideration to the effects of market orientation and social capital.

Moreover, our findings also suggest a need to improve the methodology used for studying the relationship between trust and symbiotic ventures, including those located in the auto industry. Such investigations need to collect data from all partners involved in S-venture and not just one. As our results show, if a researcher collects only questionnaire data from one partner or symbiont only, as has

commonly been the case, that data may not be sufficient in itself to predict the performance or stability of a given symbiotic ventures alliance. This is especially likely to be the case when the data are collected by self-reporting only, thus risking common source bias.

Our results also have useful implications for managements, especially those in small- and medium-sized firms that want to enter the fast-growing market in China by establishing symbiotic ventures. For instance, our data suggest that firms with market orientation are more likely to accumulate social capital, which in turn should improve the stability of symbiotic ventures.

Finally, these findings also suggest that state ownership is no longer effective in maintaining the stability of symbiotic ventures in today's China. After more than 30 years of opening up and economic reform, managerial value and other institutions, including those relating to symbiotic ventures, are moving closer to their international equivalents. State ownership may therefore not have any significantly positive effect on the stability of symbiotic ventures.

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